SYLLABUS

Name of Course: Pathology Lab (PATH-227/727)

Length of Course: 2.5 units, 33 hours (2 hours lecture, 1 hour lab/week)

Course Description: The students are provided an opportunity to visualize the gross anatomical nature of the pathological conditions which have been explained in the combined physio-path course series. This is a problem -based learning class designed to provide a review of pathophysiology and orient the student to the clinical relevance of common pathological conditions.

Prerequisites: PATH-120, PATH-217

Course Offered By: Basic Science Department

Required Texts: NONE

Required Reading: Balon, Jeffrey, et al. A comparison of active and simulated chiropractic manipulation as adjunctive treatment for childhood asthma. New England Journal of Medicine 1998;339:1013-1020.

Reference Text: Longo DL Harrison's Principles of Internal Medicine. 18th ed. 2012
Kumar V Robbins & Cotran Pathologic Basis of Disease. 9th ed. 2015

Materials: Handouts will be provided by the instructor. There is no reader for the class. Electronic access is encouraged.

Method of Instruction: The first 2 hours are spent as a workshop directing, reviewing, and demonstrating basic principles of pathophysiology. Students are given activities to answer/turn in during this 2 hour period for practice. There will be some group work and some problems to solve which require independent thinking. Some activities will require access to the internet and some create better learning by following the instructor guided review. Students will work with lab reports, Xrays, cases, preserved specimens, and current literature. During the one-hour break-out sessions with smaller numbers of students, a similar application of reviewed principle will be presented, and the student will submit the answers to prepared questions for grade at the close of each session. Due to the diversity of activities, it is imperative that students arrive to class on time and listen carefully to instructions.

Grades and Method of Grading: The student will submit an assignment for grade during each one hour lab period. Each will offer the student the opportunity to think critically and apply basic science to the clinical setting. Organization, analysis, comparisons and contrasts, judgments and other skills preparing for diagnosis are being cultivated by these exercises. Therefore, the points awarded will require that the student clearly demonstrate that each has done his/her own work/ thinking and made a contribution even during group assignments. Any

papers which are too similar to each other will be awarded only a fraction of the total points possible. The instructor will critique the work and return the results the following class period. A student receiving less than 70% is allowed to redo/correct, even on MCQ formatted problem sets, and a new grade will result from the average. These corrections are due one week after they are returned.

If a student is absent for a problem solving assignment it is his/her responsibility to contact the instructor, get the assignment, and prepare this for submission by the following class meeting or a grade of 0 will be awarded. If the student gets the assignment and submits it prior to the review of the answers at the start of class, they may still obtain full credit.

Each Problem Solving Exercise has the same weight. There are no dropped assignments.

There are no tests as such only problems to solve by engaging the mind in critical thinking. There Is No Final Exam

The **final grade** will be determined by the following scale:

A 4.0 90 - 100% B 3.0 80 - 89% C 2.0 70 - 79% F 0.0 <70% Failure – The student must repeat the entire course.

Extra Credit: There will be no extra credit work accepted in this class.

Independent Student Work: All submitted work must ultimately be the product of the individual student's own efforts to solve the various "problems" posed in class. Collaboration on the assignments is encouraged, but the student must attempt to express the concepts in their own words.

Procedures for Reviewing Exams – N/A

Grades and the Grading System Final Grades are available online through the CAMS student portal. If there are any questions on grading procedures, computation of grade point average, or the accuracy of the grade report, please contact the Registrar's Office or the Office of Academic Affairs. Grades will be reported and evaluation will be based on the Academic Policies, Procedures, & Services. Please refer to Evaluation Policy **(Policy ID: OAA.0007)**

In order to maintain **Satisfactory Academic Progress**, a student must maintain a 2.0 or better in each and every course. **Any grade less than a C must be remedied by repeating the class.** Please refer to Satisfactory Academic Progress **(Policy ID: OAA.0006)**

Attendance: Please refer to Attendance Policy (**Policy ID: OAA.0002**)

Conduct and Responsibilities: Please refer to the Personal Conduct, Responsibility and Academic Responsibility Policy (**Policy ID: OAA.0003**)

Make-up Exams: Please refer to Make-up Assessment Policy (**Policy ID: OAA.0001**)

Request for Special Testing: Please refer to Request for Special Testing (**Policy ID: OAA.0004**)

Accommodation for Students with Disabilities:
If you have approved accommodations, please make an appointment to meet with your instructor as soon as possible. If you believe you require an accommodation, but do not have an approved accommodation letter, please see the Academic Counselor Lori Pino in the Office of Academic Affairs. Contact info: Lpino@lifewest.edu or 510-780-4500 ext. 2061. Please refer to Service for Students with Disabilities Policy (**Policy ID: OAA.0005**)

Electronic Course Management:
Canvas is LCCW's Learning Management System (LMS). Canvas will be used throughout the quarter during this course. Lectures, reminders, and messages will be posted. In addition, documents such as the course syllabus and helpful information about the class project will be posted. Students are expected to check Canvas at least once a week in order to keep updated. The website address for Canvas is https://lifewest.instructure.com/login/canvas Please refer to the Educational Technologies Policy (**Policy ID: OAA.0009)**

Course Goals: The purpose of this class is to integrate pathology information in a problem-based format and to foster the development of critical thinking.

Course Objectives:

Week 1: Review inflammation - Hemodynamics

- infection, inflammation, immunity, injury, and innate
- the inflammatory response – cardinal signs
- the exudates and edema

Lab: P.S. #1: working the acute inflammatory response

Week 2: Review WBC's and their role in immunity and inflammation

- acute vs. chronic shifts in the differential
- NLMEB

Lab: PS #2 The CBC and Differential

Week 3: Review Chronic Inflammation, healing, and repair

- 1st and 2nd intention healing – wound repair with DVD
- Granulomatous inflammation
- necrosis
- dystrophic calcification
- factors influencing outcomes

Lab: P.S. #3 show specimens of chronic injury and discuss how proper clinical management prevents adverse healing outcomes

Week 4: Begin Intensive Immunology Review

- Lymphocytes – adaptive immunity with specificity and memory
- T cells – cell mediated immunity
- the major histocompatibility complex, CD4+, CD8+
- helper subtypes, dendritic /antigen presenting cells and interleukins

Lab : P.S. #4- Thymus dependencies in a case of Di George's syndrome

Week 5: Continue Immunology Review

- B cells – humoral or chemically mediated immunity
- Antibody actions
- Antibody classes

Lab: sample National Board questions = P.S. #5

Week 6: Review Hypersensitivity

- Type I = Immediate
- Type II=antibody mediated
- Type III= complex mediated
- Type IV=delayed

P.S. #6- Extrinsic asthma and its relationship to allergies

Week 7: Finish hypersensitivity with clinical cases

Lab: Review Arthritis with a Differential Approach (compare and contrast)

P.S. # 7 specimens of DJD vs. R.A. vs. Gout

Week 8: Review tumors (handout)

- alterations of cell growth - slides
- adaptive growth vs. pathology
- compare hypertrophy, hyperplasia, atrophy
- compare metaplasia, dysplasia, and anaplasia
- grading and staging

Lab: P.S. #8 compare cysts to benign, and malignant tumors

Week 9: Continue neoplastic transformation –

- nomenclature
- epidemiology
- Lab: P.S. #9–specimens with specific common cancers

Week 10: Finish oncology
Lab: observation of systems pathology – Pathology's greatest hits

NO FINAL EXAM

Student Learning Outcomes (SLO):

Upon completion of course, the student should be able to:

Week 1: Explain the difference between injury, infection, inflammation, immunity, and innate and apply the concepts of acute inflammation to a clinical case. [PLO: 3]

Week 2: Apply a knowledge of WBC function to the interpretation of a lab differential. [PLO: 3]

Week 3: Demonstrate an understanding of chronic inflammation from laboratory specimens and x-ray. [PLO: 3]

Week 4: Read and interpret a clinical case of cell mediated immunodeficiency. [PLO: 3,6]

Week 5: Answer a battery of review questions on immunopathology in the National Board format. [PLO: 3]

Discuss the normal mechanisms of cell and humoral immunity and be conversant in issues related to immunization. [PLO: 3]

Week 6: Read and interpret a clinical case of immediate hypersensitivity/bronchial asthma. [PLO: 3]

Week 7: Perform an arthritis differential from X-rays, specimens, and labs. [PLO: 3]

Week 8: Master the basic terminology of space occupying lesions comparing cysts, celes, and tumors. [PLO: 3]

Demonstrate an understanding of the differences between benign and malignant tumors. [PLO: 3]

Week9: Match characteristics of specific tumors with viewed specimens. [PLO: 3]

Understand the difference between staging and grading of tumors. [PLO: 3]

Week 10: Enjoy a viewing of Pathology's Greatest Hits showing common disease Conditions. [PLO: 3]

Summary Outcome:

By doing the weekly written assignments, the student becomes better able to integrate and analyze information related to the basic science coursework and is better prepared for the clinical experience

Program Learning Outcomes (PLO): Students graduating with a Doctor of Chiropractic degree will be proficient in the following:

1. **ASSESSMENT AND DIAGNOSIS:** An assessment and diagnosis requires developed clinical reasoning skills. Clinical reasoning consists of data gathering and interpretation, hypothesis generation and testing, and critical evaluation of diagnostic strategies. It is a dynamic process that occurs before, during, and after the collection of data through history, physical examination, imaging, laboratory tests and case-related clinical services.
2. **MANAGEMENT PLAN:** Management involves the development, implementation and documentation of a patient care plan for positively impacting a patient's health and well-being, including specific therapeutic goals and prognoses. It may include case follow-up, referral, and/or collaborative care.
3. **HEALTH PROMOTION AND DISEASE PREVENTION:** Health promotion and disease prevention requires an understanding and application of epidemiological principles regarding the nature and identification of health issues in diverse populations and recognizes the impact of biological, chemical, behavioral, structural, psychosocial and environmental factors on general health.
4. **COMMUNICATION AND RECORD KEEPING**: Effective communication includes oral, written and nonverbal skills with appropriate sensitivity, clarity and control for a wide range of healthcare related activities, to include patient care, professional communication, health education, and record keeping and reporting.
5. **PROFESSIONAL ETHICS AND JURISPRUDENCE**: Professionals comply with the law and exhibit ethical behavior.
6. **INFORMATION AND TECHNOLOGY LITERACY**: Information literacy is a set of abilities, including the use of technology, to locate, evaluate and integrate research and other types of evidence to manage patient care.
7. **CHIROPRACTIC ADJUSTMENT/MANIPULATION**: Doctors of chiropractic employ the adjustment/manipulation to address joint and neurophysiologic dysfunction. The adjustment/manipulation is a precise procedure requiring the discrimination and identification of dysfunction, interpretation and application of clinical knowledge; and, the use of cognitive and psychomotor skills.
8. **INTERPROFESSIONAL EDUCATION**: Students have the knowledge, skills and values necessary to function as part of an inter-professional team to provide patient-centered collaborative care. Inter-professional teamwork may be demonstrated in didactic, clinical or simulated learning environments.
9. **BUSINESS**: Assessing personal skills and attributes, developing leadership skills, leveraging talents and strengths that provide an achievable expectation for graduate success. Adopting a systems-based approach to business operations. Networking with practitioners in associated fields with chiropractic, alternative medicine and allopathic medicine. Experiencing and acquiring the hard business skills required to open and operate an on-going business concern. Participating in practical, real time events that promote business building and quantifiable marketing research outcomes
10. **PHILOSOPHY:** Demonstrates an ability to incorporate a philosophically based Chiropractic paradigm in approach to patient care. Demonstrates an understanding of both traditional and contemporary Chiropractic philosophic concepts and principles. Demonstrates an understanding of the concepts of philosophy, science, and art in chiropractic principles and their importance to chiropractic practice.